PALGRAVE STUDIES IN THE HISTORY OF ECONOMIC THOUGHT

Trevor Winchester Swan

Volume I

Life and Contribution to Economic Theory and Policy

Peter L. Swan

palgrave macmillan

Palgrave Studies in the History of Economic Thought

Palgrave Studies in the History of Economic Thought publishes contributions by leading scholars, illuminating key events, theories and individuals that have had a lasting impact on the development of modern-day economics. The topics covered include the development of economies, institutions and theories.

The series aims to highlight the academic importance of the history of economic thought, linking it with wider discussions within economics and society more generally. It contains a broad range of titles that illustrate the breath of discussions — from influential economists and schools of thought, through to historical and modern social trends and challenges — within the discipline.

All books in the series undergo a single-blind peer review at both the proposal and manuscript submission stages.

For further information on the series and to submit a proposal for consideration, please contact Wyndham Hacket Pain (Economics Editor) wyndham.hacketpain@palgrave.com.

Peter L. Swan

Trevor Winchester Swan, Volume I

Life and Contribution to Economic Theory and Policy

palgrave
macmillan

Peter L. Swan
UNSW (Sydney)
Sydney, NSW, Australia

ISSN 2662-6578 ISSN 2662-6586 (electronic)
Palgrave Studies in the History of Economic Thought
ISBN 978-3-031-13736-5 ISBN 978-3-031-13737-2 (eBook)
https://doi.org/10.1007/978-3-031-13737-2

Cover illustration: Trevor Winchester Swan, captured at some time in the 1950s

This Palgrave Macmillan imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Contents

About the Author

Peter L. Swan AO FRSN FASSA Professor of Finance, UNSW Sydney.
I wish to thank Lesley Booth, Geoffrey Brennan, Selwyn Cornish AM, Irwin Diewert, Robert Dixon, John Freebairn AO, David Gallagher, Bob Gregory AO, the late Geoff Harcourt AC, Wolfgang Kasper, Ulrich Kohli, Adrian Pagan AO, Alex Millmow, Barbara Spencer, Don Stammer, Paul Tilley, the late Clem Tisdell, David Vines, Anthony Waterman and Juerg Weber for valuable comments. Geoff Harcourt greatly encouraged me to write this book and put me in touch with the publisher. Geoff was born in 1931 and thus celebrated his 90th birthday recently prior to his sad passing. I also wish to thank my wife, Vipha, for her unqualified support while preparing this book. Maree Withers typed up a number of manuscripts and Stephen Webb assisted in the creation of MSWord files.David Vines (2023) will be publishing a book next year. He and I discussed Trevor Swan's three greatest pieces of work—his econometric model, his work on internal and external balance, and his growth model—in great detail at the time when I was writing this chapter. Swan's contribution will also feature in this forthcoming book.

List of Figures

List of Tables

CHAPTER 1

Introduction

Papers

Trevor W. Swan, 1937, "Forced Savings", University of Sydney, Economics II Essay, mimeo pp. 74–84.

Trevor W. Swan, 1939, "The Economic Interpretation of J.M. Keynes", *Australian Quarterly* 11(1). pp. 62–70: 85–92.

Trevor W. Swan, 1940, "Australian War Finance and Banking Policy", *The Economic Record*, 16, (June 1940, pp. 50–67): 93–106.

Trevor W. Swan, 1941 "Some Notes on the Interest Controversy", *The Economic Record*, 17, (December), 153–165: 107–118.

Trevor W. Swan, Addendum to "Some Notes on the Interest Controversy" mimeo: 119–121.

Trevor W. Swan, 1989, "The Principle of Effective Demand—A 'Real Life Model'", *The Economic Record* 65(1), (December 1989), 378–398. Written and presented in 1944–45 with a first draft in 1943 and final in 1945: 122–150.

Trevor W. Swan, 1945a, "The Role of Wages in the Australian Economy", mimeo: 151–167.

Trevor W. Swan, 1945b, "Price Flexibility and Employment", *The Economic Record* 21, (December), 236–253: 168–183.

Trevor W. Swan, "Progress Report on the Trade Cycle", *The Economic Record*, 26, No. 51, (December 1950): 184–197.

P. L. Swan, *Trevor Winchester Swan, Volume I*, Palgrave Studies in the History of Economic Thought,
https://doi.org/10.1007/978-3-031-13737-2_1

Trevor W. Swan, "The Theory of Suppressed Inflation", mimeo, (early) 1948, p. 29, plus appendix, p. 9: 198–227.
Trevor W. Swan, "The Anatomy of Inflation", 1950 mimeo: 228–263.

Explanatory Note

In this introduction to his papers I, Peter Swan, have tried to portray Trevor as he appeared to me as his son and someone who thought he knew him well. I have perhaps strayed from my simple introductory task by including a number of personal anecdotes about growing up with a father who never let on that he was at all famous and decreed that I not study economics perhaps for fear I would find out. But in perusing his personal archives at great length, I have discovered a great deal more about Trevor. By presenting both his public persona and his frailties I have tried to present Trevor as he was—a human being with many human failings—rather than a one-dimensional character who would soon fade from our memories. It is certainly both wrong and misguided to portray exceptionally gifted individuals as if they are completely different from we more ordinary mortals. The purpose of this two-volume set is to bring together his major contributions and commentaries on these contributions. As his very loyal colleague, Alan Hall (1926–2019), wrote to him on 21st December 1983 on the occasion of his retirement from ANU: "For reasons best known to yourself you have only published a fraction of your work. That which you have published remains a more enduring contribution to our discipline than that of any other Australian. Regrettably it is increasingly inaccessible other than to professional second-hand dealers in intellectual wares. Now that your formal link with the Department is about to be broken you may feel more relaxed about publication. The 'appearance' from retirement of your collected works would be a notable achievement". When Trevor Swan died in 1989, the great Australian public sector economist H.C. "Nugget" Coombs (1906–1997) wrote[1]: "Professor Swan had been by no means a narrow man, and had been widely read and interested in many forms of music." "I myself found him to be one of the most creative economists Australia has ever produced", he said. "I don't know who's looking after his work, but I do hope that whoever it is will take the opportunity of letting some it be published so

[1] *The Canberra Times,* 19 January 1989, p. 5.

it is more widely available". This is the aim of these collected works which unfortunately have had to wait for nearly four decades.

Early Life and Career

John King (2007, 271), the editor of a biographical volume of 150 of Australia's top economists, describes Trevor Swan "as possibly the greatest economist to have lived, worked and died in Australia … and also one of the most enigmatic". This two-volume set describes his life, and his contributions, together with his major papers and those of some of his contemporaries.

Trevor Swan was born on 14th of January 1918 to George Henry Swan (born 22/05/1877; died 19/11/1941), the third in nine children, and Clara Ellison Swan (nee Grant; born 8/11/1879; died 27/09/1956), one of four siblings with a brother, Lawrence (Lawrie) George (born 23/08/1919; died 8/09/2008), and two sisters, Clarice Ellison (born 9/12/1902; died 15/07/1997) and Hazel May (born 1/09/1908; died 24/05/2002). According to Trevor Swan's sister, Hazel, like his son, Trevor, George loved poetry and books, such as the Iliad and Odyssey of Homer, knew the Greek and Roman myths together with Latin Greek and loved to quote Shakespeare to his children.

Due to his mother Clara's illness, Trevor's eldest sister, Clarice, helped to bring him up and taught him to read.[2] Figure 1.1 is of George and Clara. Trevor had a strong resemblance to his father. George was an electrical engineer who ended up in the Tramway's head office in Sydney in charge of all rolling stock. George's father, Henry William Swan, was born in Suffolk, England in 1848 and migrated to Australia. He was an "inspector of nuisances" in Sydney, which seems to be like a Health Inspector would be now, and which included keeping the noise down, rowdy kids, flying kites, etc.[3] Henry died 5/09/1905 at Callen Park (Insane Asylum) in Sydney following a tramways accident. Some of what I recount below has been better said by Noel Butlin (1921–1991) (appointed AC the day before his death) and Bob Gregory (1989) in their *Economic Record* appreciation. According to his sister, Hazel, Trevor and his brother, Lawrie, sang duets together. "Lawrie had a beautiful boy

[2] Information supplied by Clarice's daughter, Lesley Booth. Lesley's own grandson, Jordan, is a successful economist.

[3] Family information supplied by Lesley Booth.

soprano voice and Trevor could put much feeling into the music and words".

At the age of 14, Trevor played the Page in a production of *Alexander's Horse* starring Margaret Rawlings, an English actress. The next year he appeared in a concert arranged by his aunt, Madame Ada Baker. At the age of 16 he featured in Australia's first musical for children, *The Magic Gum Tree*, with the lead character, an aboriginal boy with the unlikely name of Christopher Columbus. Once again, it was produced by Madame Ada Baker. He sang at eisteddfod's winning prizes until his voice broke. He was a lover of classical music, became a very successful piano player and continued to play throughout his life. Books and study always came before sports and the more normal activities of young boys. At the age of eight, he announced that he was going to become a schoolteacher. In 1950, the *Sydney Telegraph* interviewed his elder sister Hazel Pickford, of Lane Cove, who says of his schooldays: "He just worked and worked at

Fig. 1.1 George and Clara Swan

his books—and liked doing it. He had a passion for learning" (Monson, 1950). Swan's two sisters, like most girls at that time, were only able to undertake three years of high school.

Trevor's academic brilliance shone through early, topping his primary school, West Marrickville Public School, in all subjects, and excelling at debating at Canterbury Boy's High, Prime Minister, John Howard's high school. He won a number of medals for his debating skills both at school and at the University of Sydney. In his first high school year, 1930, he topped the School in History and came second in Latin but did poorly in Algebra and Arithmetic, coming 25th and 28th, respectively. This is surprising given his later facility with algebraic expression. In his second year he once again topped History and came second in English but still only 17th in Algebra but by his fourth year he was ranked 9th with a score of 80% in Algebra. In 1936 he came Dux of Canterbury Boy's High. In the same year he achieved one of the highest places in the New South Wales Leaving Certificate.

He was gifted in the piano, music and acting, where he appeared in *Faust* and other repertory productions in Canberra in the 1950s, as well as being a champion debater. His love of music continued throughout his life. His memory and ability to recall verbatim practically the vast amount of literature he read made him an outstanding conversationalist.

While employed at the Rural Bank (which became the State Bank of New South Wales until 1994 when it was taken over) under John (Jack) Crawford[4] (1910–1984, knighted in 1959) as Chief Economist (subsequently Vice Chancellor of the Australian National University), Trevor

[4] To provide an indication of how close-knit Trevor's friends in Canberra were, mostly living close to the future Parliament House, when I was a schoolboy attending Canberra High near ANU, I would wait for the bus in the street a few blocks from Jack Crawford's home. Frequently, he would stop to pick me up and drop me at school. My birthday present from Jack was Piero Sraffa's edited volume of David Ricardo's (1817), *Principles of Political Economy and Taxation*. This was Jack's way of letting us know that he was not a protectionist despite being, at the time, Permanent Secretary to Sir John ("Black Jack") McEwen's (1900–1980) Department of Trade with strong protectionist leanings. Jack's daughter, Victoria, was academically brilliant and became dux of Canberra High. Sadly, following graduation she went blind due to genetic issues and died at an exceedingly young age. Joe Gibson (husband the ANU philosopher, Quentin Gibson) who produced Repertory plays in the theatre where Parliament House now resides lived next door and Geoffrey Sawer (1910–1996), the ANU foundation law professor who played a role in the Chifley Government's Bank Nationalisation case in the Privy Council appeal, lived nearby.

did his economics degree at Sydney University on a part-time basis. In his first year, 1936, he achieved a High Distinction in Economics I and the Economics Association Prize and again in his second, third and fourth year, with HD in nearly all subjects. The marker of his 1937 economic history essay commented: “Your style is attractive, for the most part, and in some places reaches quite a high standard”. He achieved the highest possible accolade of the University Medal in 1940. He was the fifth person in 30 years to obtain the medal in the Economics Faculty and the only part-time student (Fig. 1.2).

The degree was awarded on 22nd June 1940. In addition, he was awarded the Chamber of Commerce Prize, the Frank Albert Prize and the John S. D’Arcy Prize for Distinction Students. Amongst the remaining 79 graduates at that ceremony was one Phyllis Mary Grill who was the daughter of a publican and born in Helensburgh, NSW, on the 27th of November 1916. On graduation, Trevor was immediately appointed an assistant lecturer in the Economics Department, University of Sydney. This was most unusual.

Fig. 1.2 Trevor on graduation day

In the following year, 27th of April 1941,[5] he married Phyllis Mary (Pat) Grill who had achieved one of the highest places in the Economics Degree—clearly an attempt to combine the best available economic expertise. Very unusual for a male, let alone a female normally discouraged from academic achievement, Pat qualified to enter the University of Sydney from Sydney Girls High at the ripe old age of 15. Instead, she learned secretarial skills to fill in time for a year as she felt she was too young. She was also working in the economics section of the Bank of New South Wales and studying part-time. Pat had been promoted into higher grades several times during her selective school period at Sydney Girls High, due to her academic brilliance while not suffering discrimination due to her gender. This came later: any woman who married had to relinquish her job to "preserve jobs for male breadwinners"[6]

Trevor and Pat's first born was Peter, followed by one of their progenies, my sister, Barbara. Barbara Spencer (nee Swan), and her husband, Jim Brander, are very prominent and highly cited economists who founded the area known as "strategic trade theory". Unfortunately, this rich gene for economics has yet to be identified (Fig. 1.3 and 1.4).

As a part-time undergraduate economics student while employed full-time in a bank the young Trevor Swan wrote a number of brilliant essays. Typical is a second-year essay, Swan (1937), on forced savings which is absolutely astonishing. This is the first of Swan's papers to be included in this volume. The idea that a 19-year-old second-year undergraduate could produce an essay as good as this is very striking. The argument in the essay is very powerful and connects very closely with Trevor's econometric

[5] *The Daily Telegraph*, 28/4/1941, reported: https://trove.nla.gov.au/newspaper/article/248142412?searchTerm=frank%20grill *The Daily Telegraph*, Wednesday May 28th, 1941, p. 10, reported: May (Pat) Grill and Mr. Trevor Swan were married yesterday afternoon at St. Augustine's Church, Neutral Bay. Mr. Swan is now lecturer in Economics at the University, and his bride has been, since her graduation, a member of the Economics Department of the Bank of New South Wales. She is the younger daughter of the late Mr. Francis Grill and of Mrs. Grill of Neutral Bay, and was given away by her brother, Captain Frank Grill. She wore a dusty pink wool ensemble with a black halo hat, and black accessories, and carried a bouquet of gardenias. Miss Nancy Daley, the bridesmaid, was in a pale green wool frock, and wore navy blue accessories. Mr. Lawrence Swan attended the bridegroom, who is the son of Mr. and Mrs. P. W. Swan, of Marrickville.

[6] This peculiar way of thinking is based on the fallacy that there is somehow a fixed number of jobs so that if a qualified married female is given a job there is one less job available for a male breadwinner. Another motivation was to force married women who became mothers to stay home and raise the family.

Fig. 1.3 Trevor Swan and Phillis Mary (Pat) Grill while courting at a dance in 1938

Fig. 1.4 Trevor and Pat in the early years

model, Swan (1989), which was circulated in draft form in 1943, only six years after writing his essay. In the essay he comes down to the idea that there can be forced savings for two reasons. The first is because of lags, namely that individuals base their consumption on a previous level of income and then if income increases there will necessarily be forced savings because of consumption lags. The second reason is because of a rise in the price-level which reduces the real value of income earned and thus depresses spending out of the income which had been received before the price-level increases. Both forms of forced saving exist and are estimated in his econometric model. You can see the first kind of forced saving clearly because—in the model—consumption depends on quarterly lagged income. The second is more complex to detect. What the demand side of the model determines is the value of nominal income by means of a Keynesian multiplier process. But when nominal expenditure rises, along with nominal income, to a new equilibrium, this calls forth, from the supply side of the model, a mixture of a rise in real output and a rise in the price-level. That rise in the price-level will bring about forced savings, for the same reason as that described in the essay. The reason for saying all this is that it is obvious that Trevor had in mind the things that he had learned from writing his undergraduate essay when he was building and estimating his econometric model which incorporated arguably the world's most advanced modelling of the consumption function.

Trevor Swan is known as a life-long Keynesian economist who believed that Keynes' *General Theory* (1936) had made it safe to introduce neoclassical economics to deal with issues of long-term economic and population growth. However, his first semi-academic publication, Swan (1939), published in *Australian Quarterly,* a well-known political science journal, while Swan was still a 21-year-old undergraduate and included in this volume, effectively denounces the practicality of ever implementing any of Keynes's policies. This precocious contribution is never once mentioned by Trevor Swan in any of his personal papers. In a typical fashion, he ties in the over 500-year-old radical tract written by the then Lord Chancellor of King Henry VIII, Sir Thomas More's (1478–1535), *Utopia* (1516), in which he denounced the state as a "conspiracy of the rich" to Lord Keynes's (1936) *General Theory* in which Keynes is basically advocating the complete socialization of production akin to Sir Thomas More:

> If the State is to order the current volume of investment without taking over ownership of the means of production, there are only two methods of

> procedure: either the requisite volume must be decided upon and rationed out compulsorily among private entrepreneurs, or the State must by public works, etc., make up any deficiency which remains after private enterprise has exhausted all the opportunities which it finds profitable. The former alternative is politically inconceivable; the latter economically objectionable, and politically of very doubtful prospects. (Swan 1939, 7).

Foreshadowing his own failure to plan or further India's economic development in the 1950s, he goes on: "There is no need to emphasize the waste and inefficiency likely to follow an attempt to make up to a suitable total, the widely varying volume of private enterprise. The political difficulties of long-range planning combined with speedy diagnosis and unhesitating action in an emergency are also clear". He pessimistically concludes that "Keynes's other proposal for a progressive reduction in the rate of interest to zero appears to be even more fanciful" (Swan 1939, 68), but today central banks wielding their new weapon of Quantitative Easing (QE) have essentially driven nominal interest rates down to almost zero. Following a sizeable burst of inflation in 2022 the Reserve Bank has begun the process of reversing its interest rate cuts. Swan concludes: "We can only repeat with Joan Robinson 'The Government which had the will and the power to remedy the causes of the trade cycle would have the power and the will to abolish the capitalist system altogether.'" (Swan 1939, 68).

Trevor Swan's first publication in an economics journal was in *The Economic Record*, which became his journal of choice. Swan (1940), included in this volume, sets out the fundamentals of how to pay for the war: "the revenue and loan operations of the Treasury have, as their object, not the collection of funds for expenditure by the Government, but the limitation of non-Government expenditure" (Swan 1940, 60). This was to avoid the almost inevitable inflation that accompanies rising wartime expenditure. More specifically, "a reduction which discriminates carefully so as to release for war use those specific, often highly-specialized, resources, which defence requirements demand" (Swan 1940, 62). Swan argues that the Government was getting it right with respect to the overall reduction in non-Government expenditure but not in terms of targeted expenditure reductions. In contrast with Swan's successful attempt to reduce high marginal rates in the 1974–75 Australian Commonwealth Budget, he showed no concerns back in wartime: "Taxation has the obvious advantage that it avoids the post-war fiscal and social problems of a rentier class. The only serious objection, in fact, to substituting taxation altogether for methods which add to the mount of public debt (apart from the obvious political objections) is the possible psychological effect of heavy taxes on public morale and willingness to work; the weight of this objection is extremely doubtful" (Swan 1940, 66).

In his second *Economic Record* article, Swan (1941), he made his first substantial economic theory contribution. It was his contribution to understanding the controversy over "loanable funds" versus "liquidity preference" in which he appears to settle the issue. It is included in this volume. In simplistic terms, "loanable funds" argues that the rate of interest is determined by desired saving and desired investment whereas "liquidity preference" argues that the rate of interest is determined by the supply of money and the demand for money. This latter view was argued by Lord Keynes (1936), but Swan concludes that there are no differences between the two theories. Swan suggests that the "proofs" of the identity of the two theories given by Hicks, Lerner, Haberler and others either begged the question or concealed a contradiction; and offered a new solution, based on a rigorous application of "*ex ante*" analysis to both theories.

John King (2007) asks why Swan did not send the manuscript to the *Economic Journal* where it was more likely to find a relevant audience and since Lord Keynes was the editor, it had a reasonable chance of acceptance. This begs a broader question: was Swan too parochially loyal to the Economic Society of Australia[7] and to the *Economic Record*? Swan never once submitted a paper to an overseas journal and refrained from submitting most of his output to any journal at all. He exclusively promoted Australian journals and especially the *Economic Record* and to great effect. For example, his 1956 growth article is still even today by far the most heavily cited article ever published by the *Economic Record* over its entire history since 1924.

[7] While Swan was elected President of the Economic Society from 25 August 1959 until 30 May 1961 shortly after he came back from India, he never played any active role in the Society other than to give a number of presidential addresses and was not present when he was elected.

Knowing my father as well as I do, I do not think that this question about promoting his career is something which Trevor Swan would have ever considered. Had he submitted the first econometric model of Australia's Great Depression experience to a journal in 1944 (it was published on his death in 1989), or his internal–external balance model to a journal, he might have been in the running for multiple Nobel Prizes, but I doubt that such baubles appealed to him. He certainly never thought less of Joan Robinson (1903–1983) because a Swedish committee failed to honour her. Moreover, he certainly never mentioned any regret at missing out on the Prize. In fact, I never once saw him take any action whatsoever to promote his impact or career.[8] He was always the antithesis of what "economic man" is supposed to be, as is his erstwhile student, Edward (Ted) Sieper[9] Sieper never bothered to take out his Ph.D. and Trevor Swan bypassed the Ph.D. degree entirely. Swan's colleague, Glenn Withers AO, who joined Swan's department in 1975 recalls the similarity in ability to influence public policy between Swan and Sieper:

[8] Swan received many better-paid job offers from the US and elsewhere which he simply ignored. For example, Leland B. Yeager, the Chair at the University of Virginia wrote to him on January 6, 1970, offering a position with a minimal teaching load for a salary in excess of US $30,000 p.a.

[9] In this respect, he was like his (and Bob Gregory's) erstwhile student, Edward (Ted) Sieper, who, like Swan, had been awarded the rare University of Sydney Economics Medal. Trevor Swan thought highly of Sieper, describing him as "the young Mozart of Australian economics". A fellow student, Adrian Pagan, recalls being struck by the beauty of Ted's papers, and Peter Swan concurs, but Ted despised referee comments just as Mozart might have been critical of contemporary musicians who stood in his way. Some of Ted's genius is revealed in Sieper and Swan (1973). In an unusual, if not unprecedented, move the exceedingly modest Sieper successfully petitioned the Vice Chancellor of ANU, forcing him to retract Sieper's own promotion to Senior Lecturer. His retraction was somewhat quixotically designed to place pressure on the School to maintain academic standards and in this he succeeded. Ted exerted huge influence over the School. When the head of school decided to break up the first-year subject into a larger number of small classes without consultation, Ted called his own meeting, attracting a large attendance, which then proceeded to reverse the decision. Within days, the head of school had retired on health grounds. Exceptional modesty was a trait shared by Swan and Sieper, together with outstanding debating skills and shyness towards publishing. However, with respect to academic positions, Swan differed from Sieper. Swan initially applied for a readership at ANU when it was advertised but did not demure from the foundation chair when it was offered.

> Sieper, emulating Trevor, quietly influenced public policy without fanfare. In my own case, I was chairing a public Inquiry into Private Financing of Infrastructure for the Keating Government. We were stuck on the tax advantage provisions and brought Ted Sieper in to advise. His analysis of tax avoidance provided to us became the first recommendation from the Inquiry and was implemented by the Government almost instantaneously. This staunched a huge Commonwealth tax revenue haemorrhage that was emerging.

Trevor Swan obviously never believed in "publish or perish". Surprisingly, he largely proscribed publication but did not entirely perish. In his last days he did relent slightly in permitting Treasury to nominate him for his Officer of the Order of Australia (AO) medallion in the final period of his life.

With the Japanese bombing of Pearl Harbour and their subsequent advance towards Northern Australia, Trevor became part of an exodus of economists from academia and the banks to relatively senior positions in the wartime government. He joined the Department of War Organisation of Industry (WOI) in Melbourne to become an economic advisor to the then Minister for WOI, John Dedman (1896–1973)[10]

When serving on the War Commitment's Committee, he came in contact with economist "Nugget" Coombs who became Director General of Post-War Reconstruction and later Governor of the Reserve Bank, and with whom he had a long subsequent association. "His theoretical grasp of the structure of the economy, his mastery of statistical techniques, his gift of lucid exposition and his incredible capacity for work made him the effective mainspring of the War Commitment's Committee", Coombs recalled.[11]Following rapid promotion in the Department of WOI under Coombs, Swan rose to be Chief Economist, Department of Post-War Reconstruction, in the period 1946–1950. Coombs thought

[10] As a personal aside, when I was studying economic history at ANU, John Dedman, a fellow student of advanced age, was completing his degree which he had commenced in the 1920s. Unusually for an undergraduate, John was awarded an Honorary Doctorate by ANU prior to graduation. He subsequently had a building named after him for his critical role in founding the ANU in his ministerial role in the wartime and post-war Labor governments. Trevor Swan had worked for him in Post-War Reconstruction. It seems that the advice that freshly minted graduates are given to succeed and honour their Alma Mater was not applicable to John who created the Alma Mater of thousands prior to his graduation.

[11] Rowse (2002, p. 157).

highly of Swan—"one of the very best theoretical economists we have ever produced in Australia". Noel Butlin (Butlin and Gregory, 1989, which is reproduced below) captures the young Swan at work:

> On the Japanese surrender sirens sounded throughout Canberra. Several in the Department were advised to attend Nugget Coombs's office early the following morning. Then and there assembled Coombs and his secretary Mrs Grant, Allan Brown, Jack Crawford, Gerald Firth, Arthur Tange, Fin Crisp, Noel Butlin - and Trevor. The role of the former group was essentially to witness a masterly performance by a chain-smoking Trevor, prowling Coombs's office and defining precisely the prospective events and the measures to be taken over the next several months to cope with the demobilization - protection against immediate displacement consequences, training and retraining, expediting readaptation of factory production, restoration of infrastructure and housing, capital issues control, monetary and fiscal measures to cope with expected inflationary pressures. Interchange occurred but it was unquestionably Trevor in the starring role. By the end of the day after Japan surrendered the essential government policy decisions to deal with the immediate transition from war to peace were in place.

Stuart Macintyre (2015) describes Trevor's contribution at the time:

> Demobilisation was the first of the steps that Trevor Swan identified at the end of hostilities and he thought it would require measures to guard against the 'immediate displacement consequences'. The calculations of manpower that he performed for the War Commitments Committee were applied during the preparation of the White Paper on Full Employment to produce statistical projections of expenditure, production and employment during the transition period; they suggested it would take time to absorb the 600,000 members of the armed forces and the 200,000 employed in war industries. That was one reason for staging the discharge across the best part of 12 months and for the same reason it was decided to taper off war production rather than bring it to a sudden halt, lest the labour market be flooded with munition workers.

Peter Kenyon (1991) in his review of Groenewegen and McFarlane (1990) discusses the official policy advice coming from economist policy advisers like Coombs, Sir John Grenfell (Jack) Crawford (1910–1984, knighted in 1959), Leslie Melville (1902–2002, knighted in 1957), Swan, and Wilson during and immediately after the war. He points out that Groenewegen and McFarlane: "argue that there was a real sympathy for very considerable State intervention '… when a virtually planned economy was being guided by a group of outstanding economists.' (Kenyon 1991, 205)". While Kenyon concludes: "There is little doubt that the generation of economists that lived through the arrival of Keynesianism in Australia and the War and post-war reconstruction were pre-disposed towards interventionism", this does not mean that Swan and his compatriots were socialists willing to support Prime Minister Ben Chifley's (1885–1951) plan to nationalize the banking system or that Swan and his compatriots would have supported a planned economy. As economic advisor to the Commonwealth Bank (now Reserve Bank) at the time, Leslie Melville declared that Chifley's decision to abolish private banks was his alone (see https://oa.anu.edu.au/obituary/melville-sir-leslie-galfreid-720).

Despite Swan's heavy workload in aid of the war effort, Swan (1945b, 1946) published a review of Oscar Lange in which downward flexibility in prices can restore full employment. Very critically, Swan indicates strict conditions for price deflation to create excess holdings of money balances to raise employment by spilling over to higher demands for commodities. In his rejoinder to a critic (Bruce Williams, 1946), Don Stammer (1975) points out Swan's response (1946) anticipates some aspects of the contribution later made by Patinkin, "changes in real money balances can affect the demand for commodities and thus employment or prices". Swan (1945b) is included below in this volume.

In Swan's (1950b, 200) second review article he critically examines John Hicks's *Contribution to the Trade Cycle*. Swan who has a great love of Kaldor's (1940) theory, expresses a preference for Kaldor over Hicks: "*the* theory of the trade cycle should be as general as possible, so as to provide a framework within which all conceivable elements influencing the birth and death of booms and slumps could be fitted. In this sense, first place is probably held by Kaldor's theory, which provides a framework of great elegance, convenience, and flexibility" (Emphasis in original). Swan (1950b, 200) concludes: "But is it not time to turn from alchemy to chemistry - to forget the glittering prize of achieving the theory of the trade cycle, and concentrate upon a systematic and pedestrian attempt to discover how the economy works and *grows* in its parts and as a whole?"

(Emphasis in original). In this conclusion, Swan foreshadows his most famous Swan (1956) piece on economic growth.

Understanding the Great Depression

To understand what happened to the Australian economy during the Great Depression, 1929–1934, it is necessary to understand official Australian economic policy. During the First World War both the UK and Australia had untied themselves from the Gold Standard. Following Winston Churchill's disastrous return to the international Gold Standard at pre-war parity on 28th April 1925, Australia did the same. One of the reasons for this return to a fixed exchange rate was the security it gave international lenders. Having seen the hyperinflation in the Weimar Republic in 1918–1923 when the value of the German Mark deteriorated from 7.9 to the US dollar to 4,210,500,000,000 to the dollar, tying the currency to a scarce commodity, namely gold, prevented borrowing policy to be funded by printing money as had been the case in the Weimar Republic and more recently, Robert Mugabe's hyperinflation in Zimbabwe which reached 89.7 sextillion per cent per year.

The decision to return to a fixed exchange rate in 1925 set the scene for the Great Depression which commenced in 1929–30, following a decade of relatively poor Australian performance since the ending of World War I, the "Great War". This poor performance in the late 1920s was in part due to protectionism with the 1921 Customs (Greene) Tariff which protected industries that had grown during World War 1, and the fact that, as described in Brigden Report (Brigden, *et. al* 1929) that protection taxed land rents and raised the real wages of labour. Protection greatly worsened during the Great Depression with the election of the Scullin Labor Government in 1929 which had raised tariffs, cut assisted migration from Britain and used legislation to strengthen award wages. Noel Butlin's (1985) index of general tariff levels rose from 97 in 1926 to 170 in 1933. But these factors did not actually cause the Great Depression.

Bernanke (1995) attributes much of the global collapse in economies, world-wide, during the 1930s to unintended monetary contraction which was associated with the gold standard. Countries which abandoned the gold standard relatively early such as the UK and in the dominions such as Australia suffered less than countries which remained on the gold standard as they were able to reflate their money supplies, emphasizing the role of money in the contraction. Those that remained on the gold standard longer were also more likely to resort to protectionism as, a more or less, permanent means of reducing imports (Eichengreen and Irwin, 2010). I discuss below what actually initiated the period of depression in Australia when discussing Trevor's view of how and why the collapse came to Australia. Amity Shlaes (2007) provides an account of why the Great Depression was so severe and long-lasting in the US with basically harmful intervention by both President Herbert Hoover and Franklin D. Roosevelt. She argues that Roosevelt's "anti-business" New Deal helped to undercut the entrepreneurs, together with the powerful economic engine, that had built the wealth of the 1920s destroyed in the 1929 stock market crash. Would the US have recovered much faster in the second half of the 1930s had the private sector not been subject to attack on the regulatory, legal and tax fronts? By contrast, Australia recovered much faster from the very severe depression with the worst over by 1933 whereas the US remained largely in recession until stimulated by World War II when the US entered the war.

While undertaking his intensive war work commended by Coombs, Trevor Swan set out to build a Keynesian econometric model of the Australian economy for the eleven-year period, 1928–29 to 1938–39, the beginning of the war, and to use this to provide the first empirical explanation of why the Great Depression came to Australia. He most likely commenced his work in 1942 and by 1943 had a preliminary version entitled "A Working Model of the Australian Trade Cycle—1928–39" that he gave as a seminar presentation in that year. Swan was aided by modified national account data supplied by Colin Clark and Jack Crawford (1938) with savings, investment, and import data from Roland Wilson[12] (1904–1996 and knighted in 1965). A particular innovation was the construction of the first set of quarterly national accounts enabling Swan to introduce quarterly lags into his system of equations. These quarterly national income accounts seem to have been constructed by Colin Clark from weekly bank holdings series from 1894 to 1941 with amazing accuracy and a correlation of 0.991 with the national income figures. Swan's model, that was inspired by Keynes, indicated: "the basic movements of

[12] A sympathetic commentator described Wilson, in 1947, as "a small (160cm or 5ft 3in), long-jawed, blue-eyed man with an easy manner and a strong streak of satirical, almost cynical humour". See John Farquharson https://oa.anu.edu.au/obituary/wilson-sir-roland-1558.

the Australian economy over the decade of the Great Depression can be 'explained' as the consequence of changes in a very small number of independent variables, operating on an economic system in which the relationships between the various parts conform with a consistent theoretical pattern". An initial version of the model was presented at a Melbourne seminar in 1943 and the model was finalized and circulated in 1944. A natural question which arises is: why is the standard of his unpublished papers so high, given the absence of feedback arising from publication? The answer is that Swan circulated his work-in-progress and completed papers widely at the time. During wartime, for example, most researchers like Colin Clark capable of commenting were in the public service. Colin Clark was largely employed by the Queensland Public Service and never had a job in an Australian university until late in life.

Trevor Swan was clearly not entirely happy with the model because he never once sought to publish it in any form, nor to modify or add to it.[13] Barbara Spencer (née Swan) remembers her father telling her "That the problem with his model of the Australian economy is that it did not improve prediction much above the level achievable by extrapolation of trends". Trevor Swan's statement does not seem right to me as the Great Depression was so severe as to make conventional trend extrapolation analysis redundant. Nonetheless, this unjustified pessimism may be why he chose not to do anything further with it. As usual, Trevor required perfection. Swan's model predictions corresponded exceedingly closely to the actual data. His criticism of weak prediction would apply to most early attempts at econometric models and more generally. Swan informed his student, Anthony Waterman, in the mid-1960s: "It had been accepted for publication in the *Economic Record*. But he told me that he withdrew it. Why? 'Because I couldn't believe in it' he said"[14] It would seem due to tragic self-doubt that Swan discarded an obvious opportunity for Australia

[13] There was one aspect of the model Swan was unhappy with, namely the failure to distinguish between the rural and non-rural sectors of the economy, which he corrected in Swan (1945a). Swan also expresses his disappointment with the statistical crudity and less than satisfactory theory in his econometric model in his job application for a Readership at ANU in 1950.

[14] Personal communication, September 21, 2021. Waterman was a student over the period 1964–1967.

to lead the world with the most advanced macroeconomic model poised to answer all sorts of critical questions about devastating events that could have addressed the world's pressing economic problems for decades to come. The model only saw the light of day after his death in 1989 as Swan (1989) when it was published in the *Economic Record*. This is the finished version of the model which was circulated in 1944 and is included in the present volume.

However, it seems that Swan did care about his creation, after all, regardless of what he told Waterman. In particular, he realized that his econometric model had but a single output/income, but this was not possible as even by 1945 he had adopted the Australian approach to modelling based on Wilson (1931), namely that being a small country, Australia's terms of trade are given. He therefore extended his model in a new paper which has never been published, Swan (1945a), in which he modelled wage determination exclusively within the non-rural sector excluding rural and mineral products sold overseas at prices determined in global markets. This paper which complements Swan (1989) is also included in this volume.

Swan's creation was the second macro-econometric model ever built, the first being a 34-equation model of the Dutch economy built by Jan Tinbergen in 1936 (Tinbergen (1936), and the third a seven-equation model of the US economy, for the period 1921 to 1941 built by Lawrence Klein (Klein, 1950). In his famous contribution, Tinbergen (1952), light was cast on the need for equality in the number of instruments and targets when implementing economic policy. However, this was already implicit in Swan's (1989) model. Pagan (2019, 5) points out that Tinbergen did not have the advantage of national accounts and national accounting identities used very effectively by Swan (1989). Nor did he have access to quarterly national accounts that Colin Clark was able to assist him with. It was not until 1955 that Klein and Goldberger (1955) built a model for the US that was comparable to Swan's. Interestingly, Tinbergen shared the first Nobel Prize in 1969 and Klein received the Nobel Prize for his econometric models in 1980.

Colin Clark (1949), one of Australia's most distinguished economists, described Swan's econometric model of the Australian economy (Swan, 1989) in the following way:

> In 1943 Mr T. W. Swan, of the Department of Post-War Reconstruction, Canberra, prepared a paper entitled A Working Model of the Australian